



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/075,913 | 11/13/2001 | James L. Richards | Time.106 | 1723 |
| 29099 | 7590 | 09/27/2005 | EXAMINER | |
| TIME DOMAIN CORPORATION 7057 OLD MADISON PIKE HUNTSVILLE, AL 35806 | | | TORRES, JUAN A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2631 | |

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,913

Applicant(s)

RICHARDS, JAMES L.

Examiner

Juan A. Torres

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figures 1A, 1B, 2A, 2B, 3, 4, 5A, 5B, 5C, 5D, 5E, 5F, 5G and 5H should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 1606, 1610, 1616, 1620, 1622, 1808, 1820, 1816 and 1818. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

a) In page 14 line 32 the recitation "10 KHz" is improper; it is suggested to be changed to "10 kHz".

b) In page 15 line 2 the recitation "10 KHz" is improper; it is suggested to be changed to "10 kHz".

c) In page 17 line 15 the recitation "TM-UWB" is improper; it is suggested to be changed to "Time Modulated Ultra WideBand (TM-UWB)".

d) In page 33 line 31 the recitation "peak 908" is improper; it is suggested to be changed to "peak 910".

Appropriate correction is required.

Claim Objections

Claim 28 is objected to because of the following informalities: in line 2 of claim 28 the recitation "in the resence" is improper; it is suggested to be changed to "in the presence". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification doesn't disclose: square wave pulses, sawtooth wave pulses, Haar wavelet pulses, doublet pulses, triplet pulses and set of wavelets pulses.

Claims 29-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification doesn't disclose that the plurality of pulses is subdivided into pulse groups interspersed with time periods without pulses

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27-31 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Fullerton (US 5677927 A).

As per claim 27 Fullerton discloses a method for separating the multipath responses of a plurality of pulses, comprising the steps of transmitting a plurality of pulses having predefined pulse characteristic, where a predefined pulse characteristic

corresponds to a pulse position in time (figures 1A-3 and 10 column 13 line 22 to column 16 line 37; and figures 1A-3 column 8 lines 18-67 and column 9 lines 28-57); receiving the plurality of pulses in accordance with the predefined pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); determining cross coupling value for a first pulse relative to a second pulse (figures 16A-16C column 17 lines 1-22); and separating the multipath response of the first pulse from the multipath response of the second pulse using the at least one cross coupling value (figures 1A, 6A-8D, 29 and 31 column 8 lines 18-67; column 11 line 21 to column 12 line 33; column 28 lines 2-30; and column 28 lines 40-47).

As per claim 28 Fullerton discloses claim 27. Fullerton also discloses that the cross coupling value is determined adaptively to maintain operation in the presence of scenario dynamics, where the scenario dynamics comprises motion of an object in the environment, motion of a transmitter, and motion of a receiver (figure 29 column 28 lines 2-30).

As per claim 29 Fullerton discloses claim 27. Fullerton also discloses that the plurality of pulses is subdivided into pulse groups interspersed with time periods without pulses (figure 29 column 28 lines 2-30).

As per claim 30 Fullerton discloses claim 29. Fullerton also discloses that the time period without pulses allows for the decay of multipath energy produced by the preceding pulse group (figures 26A-27G column 26 line 49 to column 27 line 21; figure 29 column 28 lines 2-30).

As per claim 31 Fullerton discloses claim 29. Fullerton also discloses that the time periods without pulses allow for reception of pulses between transmissions of pulse groups (figures 26A-27G column 26 line 49 to column 27 line 21; figure 29 column 28 lines 2-30).

As per claim 36 Fullerton discloses a method for positioning a pulse, comprising the step of positioning the pulse in time based on the multipath response of a preceding pulse (figures 3, 6A-8D, 29 and 31; column 9 lines 28-57; column 11 line 21 to column 12 line 33; column 28 lines 2-30; and column 28 lines 40-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton (US 5677927 A) in view of Kleider (US 6154489 A).

As per claims 1 and 14 Fullerton discloses a method and apparatus for determining a pulse characteristic of a transmitted pulse, comprising the steps of transmitting a first pulse having a first pulse characteristic (figure 3 and figure 10 column 13 line 22 to column 16 line 37); receiving the transmitted pulse having the first pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); and determining multipath response characteristic of the received first pulse (figure 6A-8D column 11 line 21 to column 12

line 33). Fullerton doesn't disclose determining a second pulse characteristic of a second transmitted pulse based on the multipath response characteristic. Kleider discloses determining a second pulse characteristic of a second transmitted pulse based on the multipath response characteristic (figure 1 column 6 line 16 to column 7 line 50). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 1 and 14.

As per claims 2 and 15 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses a pulse characteristic of the first and second pulse characteristic corresponds to a pulse position in time (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted

signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 2 and 15.

As per claims 3 and 16 Fullerton and Kleider disclose claims 2 and 15. Fullerton also discloses multipath response characteristics comprising a zero crossing point and where the first pulse is positioned at the zero crossing point (figures 1A, 6A-8D and 31 column 8 lines 18-67; column 11 line 21 to column 12 line 33; and column 28 lines 40-47). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 3 and 16.

As per claims 4 and 17 Fullerton and Kleider disclose claims 3 and 16. Fullerton also discloses that the zero crossing minimizes coupling between the first pulse and the second pulse (figures 1A, 6A-8D and 31 column 8 lines 18-67; column 11 line 21 to column 12 line 33; and column 28 lines 40-47). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to

responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 4 and 17.

As per claims 5 and 18 Fullerton and Kleider disclose claims 2 and 15. Fullerton also discloses that the multipath response characteristic comprises a maximum response point and where the first pulse is positioned at the maximum response point (figures 1A, 6A-8D and 31 column 8 lines 18-67; column 11 line 21 to column 12 line 33; and column 28 lines 40-47). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 5 and 18.

As per claims 6 and 19 Fullerton and Kleider disclose claims 5 and 18. Fullerton also discloses that the signal of the first pulse is enhanced by the multipath signal of the second pulse (figures 1A, 6A-8D and 31 column 8 lines 18-67; column 11 line 21 to column 12 line 33; and column 28 lines 40-47). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to

incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 6 and 19.

As per claims 7 and 20 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses transmitting the first pulse having the first pulse characteristic and the second pulse having the second pulse characteristic (figure 3 and figure 10 column 13 line 22 to column 16 line 37); receiving the first pulse having the first pulse characteristic and the second pulse having the second pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); and separating the multipath response of the first pulse from the multipath response of the second pulse by solving simultaneous equations (figures 1A-3 column 8 line 19 to column 9 line 57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 7 and 20.

As per claims 8 and 21 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses a pulse characteristic of the first and second pulse characteristic corresponds to a pulse amplitude characteristic (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 8 and 21.

As per claims 9 and 22 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses a pulse characteristic of the first and second pulse characteristic corresponds to a pulse width characteristic (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 9 and 22.

As per claims 10 and 23 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses a pulse characteristic of the first and second pulse characteristic corresponds to a pulse polarity characteristic (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 10 and 23.

As per claims 11 and 24 Fullerton and Kleider disclose claims 10 and 23. Fullerton also discloses that the pulse polarity characteristic comprises whether a pulse is inverted (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 11 and 24.

As per claims 12 and 25 Fullerton and Kleider disclose claims 1 and 14. Fullerton also discloses a pulse characteristic of the first and second pulse characteristic corresponds to a pulse type characteristic (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 12 and 25.

As per claims 13 and 26 Fullerton and Kleider disclose claims 12 and 25. Fullerton also discloses that the pulse type characteristic comprises at least one of: a square wave pulse; a sawtooth pulse; a Haar wavelet pulse; a gaussian monopulse; a doublet pulse; a triplet pulse; and a set of wavelets (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted

signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claims 13 and 26.

As per claim 32 Fullerton discloses a method for determining characteristics of a pulse comprising the steps of transmitting from a first transceiver, a pulse having a first pulse characteristic, where the pulse characteristic corresponds to a pulse position in time (figures 1A-3 and 10 column 13 line 22 to column 16 line 37; and figures 1A-3 column 8 lines 18-67 and column 9 lines 28-57); receiving at a second transceiver the transmitted pulse in accordance with the first pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); determining at the second transceiver a multipath response characteristic of the received pulse (figure 6A-8D column 11 line 21 to column 12 line 33); a pulse characteristic of the first and second pulse characteristic corresponds to a pulse position in time (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton doesn't disclose determining at the second transceiver a second pulse characteristic of the pulse using the multipath response characteristic, where a pulse characteristic corresponds to a pulse position in time; communicating from the second transceiver to the first transceiver the second pulse characteristic of the pulse; and transmitting from and receiving at the first and second transceiver a pulse having the second pulse characteristic. Kleider discloses determining at the second transceiver the characteristics using the multipath response (figure 1 column 6 line 16 to column 7 line 50); communicating from the second transceiver to the first transceiver the characteristic of the signal (figure 1 blocks 127 and 115 column 6 line 16 to column 7

Art Unit: 2631

line 50); and transmitting from and receiving at the first and second transceiver signals having the second signal characteristics (figure 1 blocks 115, 109, 111, 113 and 102; column 6 line 16 to column 7 line 50). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claim 32.

As per claim 33 Fullerton discloses a system, comprising a first transceiver capable of transmitting a pulse having a first pulse characteristic, where a pulse characteristic corresponds to a pulse position in time (figures 1A-3 and 10 column 13 line 22 to column 16 line 37; and figures 1A-3 column 8 lines 18-67 and column 9 lines 28-57); a second transceiver capable of receiving the transmitted pulse in accordance with the first pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); the second transceiver capable of determining multipath response characteristic of the received pulse (figure 6A-8D column 11 line 21 to column 12 line 33); where a pulse characteristic corresponds to a pulse position in time (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton doesn't disclose that the second transceiver capable of communicating the second pulse characteristic of the pulse to the first transceiver; and the first and second

Art Unit: 2631

transceiver capable of transmitting and receiving a pulse having the second pulse characteristic. Kleider discloses that the second transceiver capable of determining a second characteristic using the multipath response characteristic (figure 1 column 6 line 16 to column 7 line 50); second transceiver capable of communicating the second characteristic to the first transceiver (figure 1 blocks 127 and 115 column 6 line 16 to column 7 line 50); and the first and second transceiver capable of transmitting and receiving the second pulse characteristic (figure 1 blocks 115, 109, 111, 113 and 102; column 6 line 16 to column 7 line 50). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claim 33.

As per claim 34 Fullerton discloses a method for determining a pulse characteristic, comprising the steps of transmitting from a first transceiver, a pulse having a first pulse characteristic, where the first pulse characteristic corresponds to a pulse position in time (figures 1A-3 and 10 column 13 line 22 to column 16 line 37; and figures 1A-3 column 8 lines 18-67 and column 9 lines 28-57); receiving at a second transceiver the transmitted pulse in accordance with the first pulse characteristic (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to

Art Unit: 2631

column 18 line 7); determining at the second transceiver a multipath response characteristic of the received pulse (figure 6A-8D column 11 line 21 to column 12 line 33), where the pulse characteristic corresponds to a pulse position in time (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton doesn't disclose determining at the second transceiver a second pulse characteristic of the pulse using the multipath response characteristic; transmitting from the second transceiver, a pulse having the second pulse characteristic; searching for and receiving at the first transceiver the transmitted pulse having the second pulse characteristic; transmitting from and receiving at the first and second transceiver at least one pulse having the second pulse characteristic. Kleider discloses determining at the second transceiver a characteristic of the signal using the multipath response characteristic (figure 1 column 6 line 16 to column 7 line 50); transmitting from the second transceiver, the characteristic (figure 1 blocks 127 and 115 column 6 line 16 to column 7 line 50); searching for and receiving at the first transceiver the transmitted characteristic (figure 1 block 115; column 6 line 16 to column 7 line 50); transmitting from and receiving at the first and second transceiver having the second characteristic (figure 1 blocks 115, 109, 111, 113 and 102; column 6 line 16 to column 7 line 50). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the

characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claim 34.

As per claim 35 Fullerton discloses a system, comprising a first transceiver capable of transmitting pulse having a first pulse characteristic, where the pulse characteristic corresponds to a pulse position in time (figures 1A-3 and 10 column 13 line 22 to column 16 line 37; and figures 1A-3 column 8 lines 18-67 and column 9 lines 28-57); a second transceiver capable of receiving the transmitted pulse in accordance with the first pulse characteristic, the second transceiver capable of determining a multipath response characteristic of the received pulse (figures 6A-8D and 14; column 11 line 21 to column 12 line 33; and column 16 line 38 to column 18 line 7); where the pulse characteristic corresponds to a pulse position in time (figures 1A and 3 column 8 lines 18-67 and column 9 lines 28-57). Fullerton doesn't disclose that the second transceiver capable of determining a second pulse characteristic of the pulse using the multipath response characteristic; the second transceiver capable of transmitting a pulse having the second pulse characteristic; and the first transceiver capable of searching for and receiving the transmitted pulse having the second pulse characteristic, the first and second transceiver capable of transmitting and receiving a pulse having the second pulse characteristic. Kleider discloses that the second transceiver capable of determining a second characteristic of the pulse using the multipath response characteristic (figure 1 column 6 line 16 to column 7 line 50); the second transceiver capable of transmitting the second characteristic (figure 1 blocks

127 and 115 column 6 line 16 to column 7 line 50); and the first transceiver capable of searching for and receiving the transmitted second characteristic (figure 1 block 115; column 6 line 16 to column 7 line 50), the first and second transceiver capable of transmitting and receiving having the second pulse characteristic (figure 1 blocks 115, 109, 111, 113 and 102; column 6 line 16 to column 7 line 50). Fullerton and Kleider teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the adaptive coding disclosed by Kleider with the pulse modulation scheme disclosed by Fullerton. The suggestion/motivation for doing so would have been to responds to changes in the quality of the communications channel modifying the characteristics of the transmitted signal (Kleider abstract). Therefore, it would have been obvious to combine Kleider with Fullerton to obtain the invention as specified in claim 35.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Juan Alberto Torres
09-22-2005


KEVIN BURD
PRIMARY EXAMINER